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ABSTRACT

In order to determine the effect of being disabled on the academic progress of disabled college students, a questionnaire assessing the social climate of a major western university, the quality of its programs and instruction, and student academic and career expectations was administered to 100 disabled students. Factors explored in the questionnaire included prosocial climate, campus support services, social adjustment, social alienation, motivation, and perceived competence in social and task situations. Analyses of the data revealed that the disabled students' motivation was significantly related to their level of social alienation, while perceived competence was most related to level of social adjustment. Among suggestions offered are the following: (1) alumni with disabilities should be surveyed to determine if the university is doing enough to prepare disabled students in career planning and placement; (2) the university needs to identify ways in which disabled students can better function as role models and assume greater campus responsibilities; and (3) university personnel need to be aware of the considerable variability in the needs and abilities of their disabled students. (JW)

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Predicting Academic Success for Disabled Students in Higher Education

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Predicting Academic Success for Disabled Students in Higher Education

Abstract

Research has indicated that disabled and nondisabled persons experience communication strained by high levels of uncertainty for both communicators. The purpose of this study was to assess the effect of being disabled on the academic progress of disabled college students. It was felt that academic success will be contingent upon positive communication with faculty, fellow students, and university personnel. A questionnaire assessing the campus' social climate, the quality of its programs and instruction, and the students' academic and career expectations was administered to 100 disabled students. Analyses of the data revealed that the disabled students' motivation was significantly related to their level of social alienation, while the students' perceived competence was most related to their level of social adjustment. The theoretical implications of these findings and avenues for future research were discussed.

Predicting Academic Success for Disabled Students in Higher Education

Colleges and universities are experiencing unprecedented increases in the attendance by persons with disabilities (McLoughlin, 1982). For the most part, this is due to medical advances, rehabilitation engineering, federal and state legislation, and public awareness (Perry, 1981). Equally important is the rights movement among persons with disabilities (Breslin, 1986). For example, students at the University of California, Los Angeles sponsored a demonstration on June 6, 1986, regarding handicapped parking, inaccessible buildings, and UCLA's refusal to name a compliance officer to oversee the school's compliance with section 504. Among other changes in its student demography, higher education is seeing a larger and more vocal disabled student population.

Have colleges paid enough attention to the socio-psychological and access needs of their disabled students? Perhaps not. In general, we know that disabled persons are exposed to a common set of socially imposed hazards, e.g., physical barriers, job discrimination, stereotypes, social isolation, and outright prejudice, that act to segregate them from mainstream culture (Emry & Wiseman, in press). Although many of the physical barriers have been diminished, the limiting effects of the socio-psychological barriers are still active. Being disabled takes on meanings that weigh on both nondisabled and disabled persons. Disabled and nondisabled persons often experience strained communication (Braithwaite, Emry, & Wiseman, 1984; Deegan, 1977). This strained communication is partly an artifact of social stereotypes of disabled persons (Belgrave & Mills, 1981; Donaldson, 1980; Evans, 1976; Gliedman & Roth, 1980; Gosse &

Sheppard, 1979; Higgs, 1972). Ambiguous and conflicting social stereotypes of disabled persons generate high levels of uncertainty for nondisabled persons interacting with disabled persons (Emry & Wiseman, in press). These same factors seem to be operative in the academic setting. In the words of a student with a disability, "It's the mid 80's and still the disabled students . . . are not being treated with the independence and dignity we deserve" (Hooper, 1986, p. 7).

Our concern in this study is with the effect of the disability on the academic progress of disabled students. Specifically, we will examine the nature of the communication between disabled students and their professors, fellow students, and academic support personnel. Further, we will also examine the disabled students' satisfaction with the university climate and their prospects for academic success. Presumably, to the degree that disabled students encounter communication uncertainty and problems, they will have less academic success than those disabled students who have more positive communication encounters with faculty, students, and university staff.

Student-Faculty Interaction

Student-faculty interaction is one of the most important factors in determining the student's success in and satisfaction with higher education (Astin, 1975). In their seminal study, Beal and Noel (1980) surveyed 947 university officials across the United States to determine the positive and negative influences on student retention. The top positive influence on retention was a caring attitude on the part of faculty and staff. This is consistent with the results of Dallas' (1971) experiment comparing a group of faculty trained to be helping advisors and a control group of untrained faculty. Given the uncertainty between disabled and nondisabled persons, faculty understanding seems particularly important to the success of the

disabled student (Abramson, 1981; Mitchell, 1976). Unfortunately, a number of researchers have found that nondisabled faculty are uncertain as to how to interact with their disabled students (e.g., Frith & Edwards, 1981; Hendlin, 1981) and in advisement sessions (e.g., Avery, 1982).

Indeed, teachers have had little, if any, training in teaching disabled students (Sesow & Adams, 1982). As a result, faculty find themselves working with students whose needs they do not fully understand (Schubert, Landers, Curtis, Anderson, & Curtis, 1984). In many cases, this lack of understanding generates anxiety for the teacher and, in turn, feelings of rejection for the student. Further, many teachers hold mixed stereotypes of disabled students (Brodwin & Gardner, 1978; Green, Kappes, & Parish, 1979). On the one hand, they view the disabled person as independent and capable, and, on the other hand, as dependent, sad, and isolated (Altman, 1981; Longmore, 1985). Such stereotypes reduce the individuality of the person leading to restricted behaviors and opportunities (Schroedel, 1978). The ultimate result is that the disabled student is uncomfortable and unwelcome in the academic environment (Hooper, 1986) due to an inability of the faculty person to understand the disabled student as a person with unique strengths and weaknesses.

Student-Student Interaction

Another factor that can facilitate or detract from disabled students' success is their interaction with fellow students. Nondisabled students can provide academic assistance and emotional support if they understand and support the disabled student. Unfortunately, nondisabled students do not understand the needs of disabled students and their reactions to disabled persons are often inappropriate (Rice, 1979; Safferstone, 1977; Thompson, 1981). Disabled students are often victims of insults, apathy,

and unsolicited and demeaning help (Wiseman, Emry, Morgan, & Messemer, 1986). Weinberg (1978) examined attitudes toward the disabled student in three situations: segregrated dormitories, integrated dormitories, and integrated roommate dormitories. Students in segregrated dormitories perceived disabled students as less interactively attractive, less happy, more self-controlled, more moral, more dependent, and more politically conservative than nondisabled students. Living in the same dormitory with disabled students had little impact on these perceptions. Students living in integrated rooms rated the disabled student as less sexually attractive, less physically attractive, more religious, less aggressive, and less happy than nondisabled students. A body of research findings suggests that disabled students are not well accepted by their fellow students (e.g., Furnham & Gibb, 1984; Hazzard, 1983; O'Moore, 1980; Thompson, 1982, 1981) and are social isolates who receive little empathic communication (Thompson, 1981).

Little research is available from the disabled students' perspective. What is available suggests that disabled students perceive that the attitudes of the nondisabled persons are the "major barrier facing them" (Penn & Dudley, 1980, p. 156). Many disabled students report social isolation and difficulties in adjusting to the academic setting. Most indicate that self-drive is how they survived the academic setting (Penn & Dudley, 1980). Yet, is self-drive enough?

Academic Support Services

The academic and social integration of the disabled student with the university community is another factor in the academic success of the student (Beal & Noel, 1979; Tinto, 1975). To facilitate this integration, universities have sponsored cultural, social, extracurricular, athletic, and other activities (Bean & Metzner, 1985). Research has demonstrated

that students who are involved in such activities are more likely to persist in their course of study. However, no research has attempted to ascertain what campus activities are important to the disabled student. Some evidence suggests that familial support and assistance, a disabled students' center, and knowledge that others had succeeded, were important in adjusting to college life (Penn & Dudley, 1980). Unfortunately, only 25% of the universities provide special facilities for disabled students (McLoughlin, 1982). Few universities adapt advisement centers, tutorial services, financial aid assistance, etc., to the needs of disabled students.

Of particular interest to our study is the service provided by our center for career development and placement. Does the center facilitate the disabled students' efforts to integrate their goals, abilities, and motivations into meaningful educational and career patterns? Typically, disabled persons are found among the chronically underemployed and unemployed or, when working, are in boring, dead-end jobs that lead to frustration and dissatisfaction (McLoughlin, 1982). Some account for this by suggesting there exists a hiring bias against disabled persons (Stone & Sawatzki, 1980). And even if such a bias does not exist the interview process can be problematic (Kacena, in press). University centers for career development can train disabled students in interviewing skills and help them in overcoming job discrimination when it exists.

The present study is an attempt to understand how social, academic, institutional, and personal factors influence disabled students' perceived success in academia and their eventual careers. We hope to isolate influences on disabled students' persistence in and anticipated benefits from higher education.

METHODS

Sample

A total of 236 questionnaires were mailed to the disabled student population enrolled in a major western university. Of these, 100 were returned, resulting in a response rate of 42.3%. While a higher response was desired, it was felt that given the difficulties in completing the questionnaire for this disabled population (e.g., problems of vision, muscular control), the resultant response rate was deemed adequate. In regards to the demography of the sample, the average age was 30.9 and 43% were male. A total of 24 different disabilities were reported, with the modal disabilities affecting locomotion (37.6%) and vision (10.5%).

Questionnaire

Based upon a review of the literature and our past research, we developed three sets of questions. The first set consisted of 12 Likert-like items that focused on the communication climate of the university (cf. Table 1). These items were rated on a one-to-four point scale, where 1=strongly disagree and 4=strongly agree. The second set of 15 items were, for the most part, drawn from a recent campus assessment of student needs and priorities (Daigle, 1985). These 15 items focused on the quality of campus programs, instruction, advisement, resources, and services (cf. Table 2). Each item was rated on a one-to-five point scale, where 1=very poor and 5=excellent.

Whereas the first two sets of items focused on the campus and its climate, the last set of items focused on the subject's self-confidence, achievements in college, and expected post-graduation successes (cf. Table 3). This last set of seven items were rated on one-to-four point scales, where 1=strongly disagree and 4=strongly agree.

Data Analysis

The data were analyzed in three ways. First, simple descriptive statistics were computed for all 34 items. This analysis will provide a normative picture of disabled students' needs. Where comparable data exist on nondisabled students' assessments of these items (viz., 13 of the 15 campus-related items), similarities and differences between the two groups will be noted. Second, factor analyses were computed to determine underlying dimensions within the communication climate and campus-related items, on the one hand, and the outcomes items on the other. Lastly, stepwise multiple regression analyses were computed to assess the relationships between the outcome factors and the campus climate factors.

RESULTS

Descriptive Statistics

Table 1 presents the means and standard deviations for the 12 communication-related items. An examination of these descriptive statistics suggests that our sample felt fairly positive about themselves and their communication with nondisabled students and faculty. The four items with the highest average agreements were in regards to their perceived adjustment to college (mean=3.37 on a four-point scale), ability to communicate with students and faculty (3.30), their ability to establish friendly relationships (2.99), and the perceived friendliness of nondisabled students (2.95). This positive attitude is further reflected in the sample's disagreement with three of the more negative items: my disability prevents contact with my professors (1.75), I do not communicate well with nondisabled students (1.75), and I feel lonely on campus (1.86). Even though there were, on the average, positive perceptions of the communication climate of their campus, given the relatively high standard deviations it should be noted that there was considerable variability in

these opinions across the sample.

The descriptive statistics for the 15 campus-related items are presented in Table 2. By far, the greatest satisfaction was registered for the campus' center for disabled students (mean=4.35 on a five-point scale). The next most favorably rated campus characteristics were pedagogical in nature, specifically, the variety and content of courses (3.99), quality of instruction (3.93), and the intellectual stimulation from faculty (3.91). Of concern is the fact that the disabled students were least satisfied with the academic advising they were receiving (3.27) and the availability of career guidance from faculty (3.35).

More evidence for the above contention that this sample of disabled students had fairly positive perceptions of the campus can also be seen in Table 2. Specifically, for the 13 items where comparable data exist from nondisabled students (cf. Daigle, 1985), seven of them were more favorably rated by the disabled students than by nondisabled students. The items where greater satisfaction was indicated by the disabled students include the quality of instruction, curriculum, intellectual stimulation from faculty, and helpfulness of office personnel. On the other hand, the disabled students rated the following less favorably than did the nondisabled students: recreational programs, academic advising, career guidance from faculty, and the services provided by the campus' career development center. Again, there seems to be a concern about obtaining information on career options for these disabled students.

Table 3 presents the means and standard deviations for the seven outcome items. A fairly optimistic picture can also be induced from these statistics. High levels of agreement were found for their perceived success in their career (mean=3.28 on a four-point scale), intent to help other disabled students (3.17), and perceived preparation for the work

arena (3.15). Furthermore, the greatest disagreement was indicated in regards to the likelihood that they will drop out of college (1.38). As with the above sets of items, it should be noted that there was considerable variability in the responses to the outcome items. The examination of the multivariate relationships presented below should clarify the dynamics of the variance in these outcome items.

Factor Analyses

Two factor analyses were computed: one for the combined communication- and campus-related items (hereafter referred to as the campus climate items) and one for the seven outcome items. For both factor analyses, a varimax solution using an oblique rotation was computed. In order to determine the number of factors to extract for rotation, we used Cattell's (1966) Scree Test which entails plotting the eigenvalues and then isolating the scree in the plot.

For the 27 campus climate items, it was determined that a four-factor solution best characterized the data, accounting for 50.1% of the total variance in the data. The items' factor loadings are presented in Table 4.

The first factor extracted accounted for 22.7% of the total variance in the 27 items. The items having the largest loadings on this factor were faculty stimulation (factor loading=.72), quality of instruction (.66), friendliness of nondisabled students (.60), academic advising (.59), sensitivity of administration toward diabled students (.56), accessibility of faculty (.53), faculty awareness of disabled students' needs (.43), and nondiabled students' willingness to get to know disabled students (.43). Since all of these items are concerned with the positive relations between disabled students and nondisabled faculty, students, and administrators, this factor was labeled prosocial climate.

The second factor accounted for 11.0% of the total variance in the campus climate items. Six items had high loadings on this factor: recreational programs (factor loading=.74), social/cultural activities (.63), the Health Center (.52), helpful office personnel (.51), the Handicapped Student Services (.50), and the library (.41). All of these items are concerned with various campus agencies and offices, thus, this factor seems to reflect the campus' support services.

The third factor for the campus climate items captured 9.1 % of the total variance. There were four items having high loadings: I'm lonely on campus (factor loading=.80), I have poor communication with nondisabled students (.68), my disability prevents contact with professors (.61), and I communicate well with nondisabled faculty and students (-.53). With these items, the common threads seem to be communication difficulties and the resultant loneliness. Thus, we labeled this our social alienation factor.

The last factor extracted accounted for 7.3% of the variance in the campus climate items. Three items best represent this factor: I am well-adjusted for college (factor loading=.59), disabled students do their best to communicate with nondisabled students (.50), and I communicate well with nondisabled students and faculty (.49). We felt this factor represented the social adjustment of the disabled student.

Since we were using an oblique rotation of the factor solution, it was possible for the factors to be intercorrelated. Of the six possible correlations, only two were significant. Specifically, there was a positive correlation (r=.32) between prosocial climate and the support services factors and a negative correlation (-.22) between the prosocial climate and the social alienation factors. The former correlation suggests that perceptions of the helpfulness of faculty, students, and staff members may be interdependent. The second correlation should be apparent, viz.,

the better your communication with others, the less social alienation you will feel.

The second factor analysis computed in this study was on the seven outcomes items. Cattell's Scree Test suggested retaining a two-factor solution, accounting for 48.8% of the total variance in the seven items. An examination of the factor loadings in Table 5 suggests that the first factor is defined by two items: I will be successful in my career (factor loading=.91) and I feel I will drop out from college (-.45). This seemed to capture the disabled students' determination and/or motivation to succeed in work and school. For this reason, we lableded this our motivation factor. The second factor also has two items with high loadings: I will help other disabled students (.85) and I feel prepared to enter the work arena (.49). This is a more difficult factor to label, however if we probe the nature of the first item, we may find a common denominator. The first item concerns the ability to help one's peers; to do this one must perceive oneself as a competent helper and role model for others. In this sense, both items focus on one's perceived competence in social and task situations. Lastly, there was virtually no correlation (r= .07) between the two factors.

Multiple Regression Analyses

Our last statistical task required us to find the interrelationships between the four campus climate factors and the two outcome factors. To accomplish this, we computed a multiple regression analysis for each of the outcome factors.

The first multiple regression analysis assessed the relationship between the disabled students' motivation and the campus' prosocial climate, the campus' support services, the students' social alienation, and the

students' social adjustment. The beta coefficients for these four relations were .07, .13, -.23, and .13, respectively. Of these, only the relationship between the disabled students' motivation and their level of social alienation was significant (beta=-.23, $p<.03$). The negative beta suggests that feelings of increased social alienation are associated with decreased levels of motivation.

The second multiple regression analysis examined the relationship between the disabled students' perceived competence and the campus' prosocial climate, the campus' support services, the students' social alienation, and the students' social adjustment. The beta coefficients for these four relationships were -.09, .13, -.04, and .23. Only the relationship between the disabled students' perceived competence and their level of social adjustment was significant (beta=.23, $p<.03$). The positive beta suggests that with greater degrees of social adjustment, the disabled students will have greater perceived competence in both social and task situations.

DISCUSSION

The data were analyzed utilizing three approaches. Based on the descriptive statistics derived from the campus climate items, the disabled students who participated in this study seemed comfortable in the environment and felt rather positive about themselves and their communication with others. These findings suggest that disabled students have perceptions of positive relations with faculty, staff, and fellow students. Equally important, they seem to feel a part of the campus. Such findings imply that the negative social stereotypes of disabled persons (Belgrave & Mills, 1981; Donaldson, 1980; Evans, 1976; Higgs, 1972) are not completely operative within this campus environment. This conclusion is further supported by positive perceptions regarding the handicapped center,

the quality of instruction, course content, and intellectual stimulation seen as characteristic of the campus environment. In fact, some data suggest that the disabled students rate the pedagogical items more positively than do nondisabled students. On the other hand, some care should be noted. Disabled students viewed the same climate items in rather different ways. This would suggest that not all disabled students perceive the campus environment as favorably as others. Moreover, disabled students do not seem as satisfied with recreational programs, academic advisement, or career assistance as they are with the climate and pedagogical aspects. While concern was noted regarding academic advisement and, specificially, career assistance, disabled students expressed confidence in their career preparation and success. This unusual combination of observations seems to support Penn and Dudley's (1980) finding that disabled students perceive self-drive as central to success.

Secondly, the data were analyzed employing factor analysis. Two factor analysis solutions were generated. The first solution combined the communication-related items and the campus-related items. These data generated a four-factor solution. Those four factors were: prosocial climate, support services, social alienation, and social adjustment. The prosocial climate factor was defined by items that related to positive relationships while the second factor was defined by items related to campus services and support systems. Items related to communication difficulty and social isolation defined the third factor, while functional and positive communication items loaded on the last factor. Two of the six possible factor correlations were significant. The first significant correlation suggests helpful faculty and students and functional support services were related. This finding underscores the importance of faculty

interactions (Beal & Noel, 1980) and social integration (Bean & Metzner, 1985) as important factors in the academic success of students.

Two factors emerged in the second factor-analysis solution. The first factor was defined by student motivation and the second by perceived competence. The first factor suggests that disabled students see a college education as a means to an end, i.e., a career. In this sense, higher education has tended to increase the economic resources of students with disabilities (McLughlin, 1982). Moreover, the second factor implies that disabled persons see their role as both a helper of other disabled persons as well as competent role models for disabled students. Penn and Dudley (1980) found that role models were important to disabled students' academic success and many of the students who participated in this study feel a responsibility to play this role for others. Indirectly, these two factors reaffirm a sense of the disabled students' rights movement (Breslin, 1986) in legitimizing the disabled persons' rights to educational and career opportunities as well as economic equity.

Third, multiple regression analyses were utilized to ascertain the interrelationships between the four campus climate factors and the two outcome factors. The first analysis found that student motivation was negatively related to social alienation. No significant relationships emerged for student motivation and a prosocial climate, campus support services, or student social adjustment. Herzberg's (1968) theory of motivation provides an understanding of these findings. According to his theory, aspects such as a prosocial climate, campus support services, and social adjustment are considered maintenance or hygiene factors. As such, they produce no growth and/or motivation in the individual, rather they act to minimize losses in performance due to restrictions and dissatisfaction. When these hygiene or maintenance factors are not present within the

environment, persons become demotivated and experience low morale; however, remedying these conditions does not increase motivation per se. In a sense, hygiene factors make the environment tolerable (Wilson, Goodall, & Waagen, 1986). A prosocial campus climate, campus support services, and the disabled students' social adjustment simply function to make the environment more tolerable. As our data suggest, however, if the disabled student feels alienated from the campus, these factors will not be sufficient to ensure the student's retention in the university.

The second multiple regression analysis provides support for the above observations as well as enhances our understanding of the motivation of students with disabilities. Of the possible relationships between the students' perceived competency, only its relationship with the disabled students' social adjustment was significant. Here, Herzberg would suggest that disabled students are stimulated by what he labeled motivators: achievement, recognition for accomplishments, challenges, responsibility, and personal development (Wilson et al., 1986). These motivators result in feelings of increased self-esteem, competence, self-confidence, and autonomy.

The present study has a number of implications for both staff and faculty. First, university personnel should be cognizant of the social, educational, and communication needs of their disabled students. Establishing a supportive climate is important to disabled students' sense of self-worth and increases the probability that they will not become demotivated. Second, university personnel need to be aware that disabled students have multiple goals for the college education. The university is not just a place to get an education; students grow personally and socially through their contacts with fellow students, campus staff, and faculty.

Providing a prosocial climate will facilitate growth. Yet, students, in general, and disabled students, in particular, need opportunities to assume career responsibilities and leadership positions. Such opportunities best ensure student motivation and feelings of competence, self-confidence, and independence. Lastly, university personnel need to continue to be aware of the needs of their "nontraditional" students. Students are not all the same. Moreover, among our disabled student sample, there was considerable variability in their needs, attitudes, and abilities. Future research should examine this variability as it relates to the disabled students' social integration into the campus and their success in higher education.

Besides further research on disabled students in general, our study suggests some specific research foci for the future. First, research should attempt to identify why disabled students are dissatisfied with such support systems as academic advisement, career planning, and recreation. Moreover, the disabled students in this study seemed confident in finding careers and being successful in their careers. This suggests that alumni with disabilities should be surveyed to determine if the university is doing enough to prepare disabled students in career planning and placement. Finally, the university needs to identify ways in which disabled students can better function as role models and assume greater campus responsibilities. In light of increasing disabled student enrollments, institutions of higher education must remain sensitive to such issues to ensure the humanism of the campus.

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TABLE 1

Descriptive Statistics for the Communication-Related Items

	Mean*	s.d.
1. My disability prevents me from having more contact with my professors.	1.75	.92
2. Professors are aware of the special needs of disabled students in their classes.	2.53	.81
3. Administration is sensitive to the needs of disabled students.	2.86	.70
4. Nondisabled students want to get to know disabled students.	2.38	.74
5. I find myself lonely and lost on this campus.	1.86	.90
6. I do not have much communication with nondisabled students.	1.75	.91
7. Nondisabled students are genuinely friendly toward disabled students.	2.95	.74
8. Disabled students do their best to establish friendly relationships with nondisabled persons.	2.99	.65
9. Architectural barriers prevent my access to educational resources and/or buildings.	1.77	.88
10. I lack confidence in dealing with faculty and students.	1.97	.94
11. I communicate well with nondisabled students and faculty.	3.30	.66
12. I feel I am well-adjusted to college.	3.37	.61

*Mean on a 4-point scale, where 1=strongly disagree and 4=strongly agree.

TABLE 2

Descriptive Statistics for Campus-Related Items

			Pos Rating[2]	
	Mean[1]	s.d.	DA	ND
1. recreational programs	3.36	.76	35.8	60.0
2. intellectual stimulation from students	3.42	.93	47.3	50.3
3. helpful and responsive office personnel	3.61	1.00	60.0	48.1
4. social and cultural activities	3.45	.87	47.4	43.4
5. academic advising	3.27	1.17	49.5	54.5
6. quality of instruction	3.93	.75	75.8	70.3
7. availability of career guidance from faculty	3.35	1.04	43.1	44.8
8. accessibility of faculty	3.74	1.03	62.1	56.2
9. intellectual stimulation from faculty	3.91	.80	72.7	56.4
10. variety and content of courses offered	3.99	.80	77.9	51.7
11. opportunity to make friends and improve social life	3.62	1.02	56.8	46.3
12. the library and its services	3.64	.98	60.0	63.0
13. Handicapped Students Services	4.35	.84	87.4	N/A
14. Health Center and its services	3.90	.90	61.0	N/A
15. Career Development Center and its services	3.57	.81	38.9	47.2

[1]Mean based upon a five-point scale, where 1=very poor and 5=excellent.

[2]Positive ratings based upon those percentages of people who either rated the services as excellent or good. DA refers to disabled students, while ND refers to nondisabled students from Daigle's Needs Assessment (N=791).

TABLE 3

Descriptive Statistics of the Outcome Items

	Mean*	s.d.
1. I consider myself a model for other disabled students.	2.86	.93
2. I intend to encourage and help other disabled students achieve educational success.	3.17	.71
3. After graduation, I will feel adequately prepared to enter the work arena.	3.15	.65
4. Even after a college education, I expect job discrimination due to my disability.	2.64	1.05
5. I feel my attitudes toward my university are similar to other students.	3.14	.51
6. I feel I will be as successful as other students in my chosen career.	3.28	.68
7. I feel I will drop out of college before graduating.	1.38	.71

*Mean based upon a 4-point scale, where 1=strongly disagree and 4=strongly agree.

TABLE 4

Factor Loadings for the Campus Climate Items*

	Fac1	Fac2	Fac3	Fac4
disability prevents contact with prof	-.15	.29	.61	.11
profs aware of DA's special needs in classes	.43	.08	.15	.05
administration sensitive to needs of DA students	.56	-.00	.06	.16
ND students want to get to know DA students	.43	.04	.06	.36
I find myself lonely on campus	-.20	.01	.80	.15
I do not have much communication with ND students	-.18	.05	.68	.10
ND students genuinely friendly toward DA students	.60	-.26	-.12	.29
DA students try to establish relations with NDs	.03	-.06	.18	.50
Architectural barriers prevent my access	.10	.04	.30	-.08
I lack confidence in dealing with profs/students	.04	-.16	.45	.02
I communicate well with ND students/faculty	-.13	.19	-.53	.49
I feel I am well-adjusted to college	.11	.23	-.24	.59
recreational programs	-.21	.74	-.02	.03
intellectual stimulation from students	.33	.19	-.24	.12
helpful and responsive office personnel	.21	.51	.01	.19
social and cultural activities	.02	.63	-.15	.10
academic advising	.59	.22	.06	-.26
quality of instruction	.66	-.04	-.09	-.24
availability of career advice from faculty	.42	.26	-.21	-.29
accessibility of faculty	.53	.05	-.17	-.18
intellectual stimulation from faculty	.72	-.00	.00	.11
variety and content of courses offered	.38	.21	-.29	-.10
opportunity to make friends and improve social life	.37	.11	-.25	-.02
the library and its services	.10	.41	.01	.21
Handicapped Students Services	.01	.50	.05	-.11
Health Center and its services	.10	.52	.19	-.17
Career Development Center and its services	.25	.34	-.06	.02

*DA refers to disabled student and ND refers to nondisabled student.

TABLE 5

Factor Loadings for the Outcomes Items

	Fac1	Fac2
I consider myself a model for other DA students	-.12	.21
I will help other DA students achieve ed success	.10	.85
I feel adequately prepared to enter work arena	.32	.49
I expect job discrimination due to my disability	-.25	.00
My attitudes toward campus are similar to other students	.39	.04
I will be as successful as other students in my career	.91	.14
I feel I will drop out of college before graduating	-.45	.10